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SALT

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Foreign Economic Administration
by
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The present report is one of a number which were prepared during 1944 and 1945 for the Foreign Economic Administration by members of the staff of the United States Tariff Commission. Owing to the desire of the Foreign Economic Administration to obtain this material as promptly as possible, the reports were not reviewed by the Tariff Commission. All statements of fact or opinion in these reports are attributable to the individual staff members who prepared them. The reports were originally intended for confidential use of Government agencies, but are now being made public with the consent of the Foreign Economic Administration.

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FOREWORD

This is one of a series of Special Industry Analyses discussing from a commodity or individual industry viewpoint the outstanding items entering into the trade of Japan proper with its Empire and with foreign countries. These analyses are a part of a larger project which includes compilations (annotated) of the imports and exports of Japan proper by sources and destinations; surveys of certain of the colonial areas, emphasizing their Empire and foreign trade and post-war problems relating thereto; an over-all study of the trade of Japan proper; and a survey of Japan's shipbuilding industry and shipping services and requirements in the pre-war period. In all of the studies Manchuria has been included as an Empire area owing to the political, economic, and military dominance of Japan in that area, especially during the last decade.

Most of the data in these analyses were taken from official and semiofficial Japanese sources. Not only have errors and inconsistencies frequently been detected within individual volumes, but many data from different sources supposedly reporting on the same subject are irreconcilable.

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SALT

Introduction and summary.

Before the war Japan was the largest salt importing country of the world, having average annual imports during the 5-year period 1933-37 of 1.3 million metric tons valued at 18.5 million yen (5.3 million dollars). About one-third of the imports came from Empire areas--Formosa, Manchuria, and Kwantung--and one-sixth from China in 1933-37. In earlier years a much larger proportion of total imports came from these areas. Supplementing imports, Japan produced approximately 600,000 metric tons of salt yearly. Accordingly, as Japanese exports of salt were small, the apparent consumption in Japan proper has been about 1.9 million metric tons per year during this period.

Japanese consumption of salt more than doubled since 1930 having increased from 986,000 metric tons in that year to 2.3 million metric tons in 1937. This increase in consumption was the result of larger imports, as the Japanese production and exports of salt remained relatively constant. Practically all of this increased consumption of salt in Japan was accounted for by industry, chiefly for the production of such chemicals as soda ash, caustic soda, chlorine, and bleaching powder.

The salt industry has been under monopolistic control of the Japanese Government since 1905. Only persons licensed by the Government can produce or import salt and all domestically produced salt is sold by the Japanese Government. Since January 1, 1942 salt for home consumption has been rationed in Japan, 200 grams or about 7 ounces being allowed per person for a month.

Approximately 800,000-850,000 metric tons of salt are required for household consumption, the salting of fish, and in the food industries each year. The policy adopted toward Japanese chemical industries will determine the future level of imports of salt by Japan. About 1.4 million metric tons were consumed annually by the chemical industries just before the war.

If imports of 200,000-250,000 metric tons of salt into Japan should be allowed in addition to production to provide for civilian consumption, the value of these imports would probably be 3-3.5 million yen. Also, if imports of 700,000 metric tons were the level allowed for industrial consumption, which is one-half of pre-war imports for this purpose, the value of these imports would be only about 7 million yen. If imports totaled around 800,000 to 900,000 tons annually, the great bulk of them could be supplied by nearby Asiatic areas.

Description and uses.

Salt, or sodium chloride, occurs in nature in the form of the mineral, rock salt, and in the form of solutions as ocean water, salt lakes, and brine springs. Refined salt is a colorless, crystalline material, obtained by purifying rock salt or the various brine solutions.

Although it is more commonly known for its table and culinary use, salt is used principally in the chemical industry for the production of caustic soda, soda ash, chlorine, and bleaching powder. The principal end uses of these materials are for the production of ceramics, textiles, soaps, and dyes. Salt also has industrial uses other than in the chemical industry, such as in meat packing, tanning, refrigeration, metallurgy, and water softening. It is also used in dairy products, principally in butter, in medicines, and as a cattle feed in the form of blocks.

The Japanese use large amounts of salt in soybean sauce, in making pickles, and in flour paste products.

Summary of production, imports, exports, and apparent consumption.

Japanese consumption of salt increased from a yearly average of 994,000 metric tons during the 5-year period 1928-32 to 2.3 million metric tons in the 5-years 1933-37. The production in Japan proper declined slightly from an annual average of 601,000 metric tons in 1928-32 to 593,000 metric tons during the years 1933-37. Exports showed no appreciable change, being only 8,500 metric tons as a yearly average in 1928-32 and 9,200 metric tons during 1933-37. Imports, however, more than tripled, increasing from an average of 402,000 metric tons during 1928-32 to 1.3 million metric tons during 1933-37 (see table 1).

Production.

Japanese production of salt ranged between 484,000 metric tons and 676,000 metric tons annually from 1928-38, but averaged about 600,000 metric tons. Most of the salt is produced from sea water in southern Japan in the neighborhood of the Inland Sea. The industry employs 35,000-40,000 persons and uses from 3,700-4,000 boiling pans. The cost per ton of salt produced in Japan is much higher than the unit value of imported salt, being about 40 yen per metric ton as compared with the average price of imported salt of about 14½ yen per metric ton (see table 2).

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Source: Annual and monthly returns of the foreign trade of Japan, Formosa, and Korea; Financial and Economic Annual of Japan.

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1/ Not available.

Source: Financial and Economic Annual of Japan.

Imports.

Japanese imports of salt increased from 270,000 metric tons in 1928 to 1.89 million metric tons in 1939. Imports averaged 0.4 million tons valued at 5.2 million yen in 1928-32 and 1.3 million tons valued at 18.5 million yen in 1933-37. The principal sources of salt imports into Japan have been Kwantung Province, China, Formosa, Manchuria, Italian Somaliland, Egypt, and Eritrea. Empire areas as a whole (Kwantung, Formosa, and Manchuria) supplied 421,100 metric tons annually or 32 percent of total imports in the period 1933-37. If imports from China are added to these, a total of 648,000 metric tons, or about 50 percent of total imports is accounted for (see table 3).

Exports.

Exports of salt from Japan have been relatively small, the largest amount in recent years being 17,000 metric tons in 1932. The principal market for Japanese exports of salt has been Korea; the exports to Korea have, however, averaged only about 5 percent of Korea's total imports of salt from all areas (see table 4). Smaller quantities have been exported to China and Asiatic Russia.

Table 3.- Salt: Imports into Japan proper by principal sources, 1928-39, averages, 1928-32 and 1933-37

Year	Formosa	Kwantung Province	Manchuria (Manchukuo)	China	Egypt	Italian Somaliland	Eritrea	Turkey	French Indochina	Netherlands Indies	Aden	French Somaliland	All other countries	Total
Quantity (metric tons)														
1928	43,120	55,825	-	142,984	9,816	-	-	-	-	-	-	-	18,655	270,400
1929	64,120	92,566	-	172,152	11,414	-	-	-	-	-	-	-	10,476	350,728
1930	62,345	130,045	-	161,095	1,652	-	-	-	-	-	-	-	14,338	369,475
1931	101,373	208,574	-	109,333	15,501	-	-	-	-	-	-	-	37,137	471,918
1932	87,538	155,433	-	134,296	38,300	-	-	-	-	-	-	-	132,410	547,977
Average, 1928-32	71,699	128,488	-	143,972	15,337	-	-	-	-	-	-	-	42,603	402,099
1933	94,574	141,144	39,250	133,238	66,087	-	-	-	61,827	15,788	-	-	429,904	981,812
1934	83,090	167,299	114,136	174,048	116,473	-	-	-	-	72,698	-	3,288	428,537	1,159,569
1935	88,777	182,158	62,210	174,818	126,036	172,347	128,872	-	13,074	-	25,102	53,823	115,054	1,142,271
1936	93,315	250,676	121,316	255,040	87,735	211,039	80,649	106,036	92,033	-	24,349	16,838	76,685	1,415,711
1937	100,171	460,316	107,387	396,786	152,809	151,794	83,827	74,094	66,979	24,642	51,500	36,927	81,848	1,789,080
Average, 1933-37	91,985	240,318	88,860	226,786	109,828	-	-	-	-	-	-	-	226,406	1,297,688
1938	179,623	315,027	37,393	504,432	88,956	107,745	113,215	97,619	68,487	58,659	24,005	22,251	30,569	1,607,981
1939	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1,892,687
Value (1,000 yen)														
1928	618	1,071	-	1,791	298	-	-	-	-	-	-	-	572	4,350
1929	682	1,647	-	1,970	415	-	-	-	-	-	-	-	383	5,097
1930	744	1,823	-	1,689	51	-	-	-	-	-	-	-	422	4,729
1931	1,022	2,500	-	1,096	157	-	-	-	-	-	-	-	527	5,302
1932	858	2,222	-	1,312	499	-	-	-	-	-	-	-	1,562	6,413
Average, 1928-32	785	1,852	-	1,572	276	-	-	-	-	-	-	-	693	5,178
1933	989	2,335	481	1,584	853	-	-	-	2/	2/	-	-	6,456	12,698
1934	935	2,719	1,476	2,386	1,547	-	-	-	-	2/	-	2/	6,781	15,774
1935	891	2,872	738	2,433	1,698	2,357	1,687	-	2/	-	2/	2/	2,755	15,431
1936	967	3,714	1,330	3,084	1,200	2,879	1,057	1,368	2/	-	2/	2/	3,129	18,728
1937	1,037	6,902	1,303	4,615	3,960	2,608	1,829	1,731	2/	2/	2/	2/	5,963	29,948
Average, 1933-37	964	3,708	1,066	2,820	1,852	-	-	-	-	-	-	-	5,003	18,516
1938	1,641	7,253	660	8,395	2,169	3,216	2,270	1,247	2/	2/	2/	2/	5,080	31,931
1939	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	41,515

1/ Country detail not available; does not include imports from Formosa.

2/ Included in "all other countries."

Source: Annual and monthly returns of the foreign trade of Japan and annual returns of trade of Formosa.

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Organization and operation.

The ownership and operation of the Japanese zinc industry is concentrated in the hands of a few organizations; among them are Mitsubishi Mining Co., Manchuria Lead Mining Co., Mitsui Mining Co., Nippon Soda (Nippon Mining Co.), and Fujita Mining Co. These companies also largely control the production of zinc in Manchuria (Manchoukuo) and Korea (Chosen), the other zinc-mining areas of the Japanese Empire. It is notable that these same organizations are members of Suiyokai, an association which governs production, sales, and purchases for its members and exercises a virtual monopoly of the nonferrous metals industry, including copper and lead.

Production.

Mine production of zinc in Japan proper probably accounted for a little less than one-half of the Japanese smelter production and about one-fourth of the available supply of metal. However, there is little question that in recent years domestic mines have been more actively exploited. It has been estimated that 27,000 metric tons of contained zinc were made available from mines in Japan proper in 1943. This production is not attainable for a sustained period, even in wartime, and there is a likelihood that only a fraction of it could be maintained under normal peacetime conditions.

During the late 1930's there was intensive development of zinc properties in Manchuria and in Korea, especially Manchuria. The total known reserves of complex lead-zinc-silver ores in Manchuria are reported to be in excess of 15 million metric tons. The Yokajashi Mine (Chinhsi-Hsien, Chinchou Province), the Tiempaoshan (Kaotoukou, Chien-tao Province), and the Kuang Tung Kou Mine (Jente, Chuangho-Hsien, Antung Province) are the major producers. Total available production in 1943 has been estimated to be somewhat more than 16,000 metric tons of zinc metal per year.

Korean zinc deposits have been exploited by the Japanese for a number of years, and development has been intensified during the past 8 years. Available information indicates a probable current output of approximately 16,500 tons of zinc annually from a large number of mines, the most important of which are the Kentoku (Tansen Gun, Kankyo Nando), the Joniazan (Joniazan, Kogen), the Onjin (Kokai Do), and the Jitsugetsu (Jitsugetsu, Keisho).

Outside of Japan proper there is apparently only one zinc smelter and refinery of any importance, that of the Manchurian Lead Mining Co. at Julutao (Koroto), Manchuria. A smelter was supposed to have been built at Chinampo, in Korea, but no confirmation is available.

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Introduction and summary

Approximately two-thirds of the area of Japan proper, including Karafuto, is forested. These forests, which for the most part, are carefully managed are about equal in area to the State of California, and contain a variety of softwood and hardwood species suitable for lumber, pulpwood, and other products. However, not all of the forest area contains trees of sawlog size, and a considerable part must be reserved for the protection of watersheds. The accessible portion which can be economically exploited does not produce all of the lumber needed for construction and industry, and Japan normally depends upon imports to supplement the domestic supply. Imports before World War II were principally Douglas fir, pine, and other softwoods, of which about 90 percent was obtained from the United States and Canada. Mahogany, teak, and other hardwoods were imported; chiefly from the islands of the South Pacific and from southeastern Asia. The total value of imports from Empire areas and foreign countries was about 50 million yen annually in the period 1933-37.

Substantial quantities of timber exist in Manchuria (Manchoukuo), Korea (Chosen), and Formosa (Taiwan), but, to a large extent, the timber is inaccessible and lumber production has been inadequate for domestic requirements. Japan's exports of lumber to these areas has greatly exceeded imports from them.

Wood occupies an important place in the economy of Japan, although forest products represent less than 10 percent of the value of all staple products. The density of the population and the traditional preference of the people for wooden houses creates a large demand for lumber, and, in addition, many industries exist which require wood. In recent years, Japan has encouraged the production of wood manufactures for export.

Exports of lumber and timbers, including shipments to Empire areas, were generally smaller than imports, valued, between 1933 and 1937, at 34 million yen or approximately 1.2 percent of the value of Japan's total exports. In 1934 Japan's exports of lumber and timbers were about 2 percent of the volume of world lumber and timber exports. In the same year, Sweden, whose forest area is approximately equal to that of Japan, produced 13 percent of the world exports, the United States 12 percent, and the Soviet Union 18 percent. The forest resources of Japan are not sufficient to supply the raw material for an extensive export trade in lumber or wood products. Furthermore, PLURL <http://www.legal-tools.org/doc/c53048/> tions have placed a heavy drain upon the forests, which are being over-cut to provide lumber and timbers required, not only in Japan proper, but also in Korea, Manchuria, and the occupied portions of China.

Table 1.- Lumber: Production, imports, exports, and consumption in Japan proper and Karafuto, quantities, 1934-40; values, 1928-40 ^{1/}

Year	Production ^{2/}	Imports		Exports		Apparent consumption
		From Empire areas	From other areas	To Empire areas	To other areas	
quantity (1,000 board feet)						
1934	8,708,774	29,871	637,124	510,765	90,111	8,774,893
1935	8,907,159	38,806	786,713	374,484	85,319	9,272,875
1936	9,717,957	33,723	869,708	420,455	117,596	10,083,337
1937	10,421,272	39,842	756,406	444,175	100,490	10,672,855
Average, 1934-37	9,438,790	35,560	762,488	437,470	98,379	9,700,989
1938	^{3/} 12,364,608	^{2/} 38,111	^{6/} 136,723	^{2/} 560,583	^{6/} 184,449	11,794,430
1939	^{3/} 13,180,850	^{2/} 21,096	^{6/} 143,974	^{2/} 266,995	^{6/} 896,246	^{7/}
1940	^{3/} 12,753,000	333,840	387,480	923,880	1,078,200	11,962,200
Value (1,000 yen)						
1928	^{3/} 130,491	3,476	110,608	11,326	7,441	225,608
1929	^{3/} 114,250	3,502	88,470	12,698	8,966	184,558
1930	^{3/} 79,734	2,609	52,409	8,430	6,621	119,701
1931	^{3/} 71,600	2,642	43,091	6,900	4,154	106,279
1932	^{3/} 74,508	2,899	34,921	8,639	5,286	98,403
Average, 1928-32	^{2/} 94,117	3,026	65,900	9,599	6,494	146,950
1933	^{3/} 99,863	3,122	40,366	14,539	7,471	121,341
1934	^{3/} 134,134	3,170	40,009	21,321	7,654	148,338
1935	^{3/} 135,007	4,000	49,566	24,962	8,568	155,043
1936	^{3/} 158,777	4,050	55,237	28,683	9,455	179,926
1937	^{3/} 216,846	4,881	64,157	33,398	13,090	239,396
Average, 1933-37	^{2/} 148,925	3,845	49,867	24,581	9,248	168,808
1938	^{3/} 307,098	^{2/} 6,298	^{6/} 26,879	^{2/} 53,323	^{6/} 17,046	269,906
1939	^{7/}	^{2/} 2,223	^{6/} 32,326	^{2/} 39,184	^{6/} 105,557	^{7/}
1940	^{7/}	^{7/}	^{7/}	^{7/}	^{7/}	^{7/}

^{1/} Includes logs and cants, sawed lumber and timber, and railroad ties, except as noted. Production in the Mandated South Sea Islands and trade with these areas are not included, as trade statistics are not available.

^{2/} Production includes all timber felled, other than firewood and pulpwood, except as noted.

^{3/} Includes pulpwood.

^{4/} Exclusive of production in Karafuto.

^{5/} Korea only.

^{6/} Includes Manchuria and Kwantung.

^{7/} Not available.

^{8/} From a statement submitted by the Minister of Agriculture and Forestry to the House of Representatives (Japan), Feb. 18, 1941, as cited in report No. 23, Carl H. Boehringer, Tokyo, Aug. 25, 1941. (Production of pulpwood, 1934-37, from Japan Yearbook and Special Report No. 2, Carl H. Boehringer, Tokyo, July 7, 1938.)

Sources: Production, Report No. 23 (see footnote 8). Trade data from official statistics of Japan, Korea, and Formosa, and Special Report No. 220, Carl H. Boehringer, Tokyo, May 24, 1938, except as noted. Quantity of pulpwood (see footnote 3) from Japan Yearbook and Special Report No. 2, Carl H. Boehringer, Tokyo, July 7, 1938.

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Table 3.- Distribution of timber in the Japanese Empire ^{1/}

Division	Quantity of timber ^{2/}			Proportion of Empire forest
	Softwoods	Hardwoods	Total	
	Billion bd. ft.	Billion bd. ft.	Billion bd. ft.	Percent
Japan proper	339	444	783	30
Karafuto	70	10	80	3
Korea	66	38	104	4
Formosa	30	58	88	3
Manchuria ^{3/}	626	951	1,577	60
Kwantung	4/	4/	4/	4/
Total	1,131	1,501	2,632	

^{1/} Data for Mandated Islands are not available, but commercial timber is negligible.

^{2/} Converted from cubic meters on the basis of 424 board feet per cubic meter.

^{3/} Data for Manchuria from Japan-Manchoukuo Yearbook, 1941.

^{4/} Not available.

Source: Japan Yearbook, 1940-41, except as noted.

Japan proper.--More than 59 million acres in Japan proper are classed as forest land, although only 50 million acres can be considered actual forest, and much of this cannot be economically exploited. On the poorer sites trees do not attain saw-timber size, while soil protection is the major consideration in some areas and the light cutting which could be permitted would be uneconomical. Because of the rugged topography and inadequate means of transportation, logging of the more inaccessible areas can be conducted only at considerable cost, and even though prewar production did not supply normal requirements, it was cheaper to import material rather than to harvest additional domestic timber.

The forests of Japan proper vary from evergreen hardwoods in Kyushu, Shikoku, and southern Honshu to almost pure stands of conifers in northern Hokkaido. Deciduous hardwoods and conifers intermingle in central and northern Honshu and southern Hokkaido. The hardwood forests, although more extensive in area than the softwoods, contribute only about one fifth of the total production. Many of the stands are young, and the area of stands of large trees is small. Oak, ash, chestnut, and beech are the principal hardwood species, although cherry, poplar, white birch and other species occur in smaller volume. Of the conifers, sugi ^{1/} ranks first in both volume and total value. This is a tree similar in some respects to the California redwood, although smaller. Pine is next in importance among the saw-timber species. Spruce and fir also are abundant, but their principal use is for pulpwood. The most highly prized and expensive softwoods in Japan are the several species of cedar, ^{2/} but the volume of production is relatively small.

^{1/} Japanese cedar, *Cryptomeria japonica*.

^{2/} *Chamaecyparis* spp.

Korea.—Nearly 40 million acres, or 73 percent, of Korea are classed as forest land; however, only 28 million acres contain trees of present or immediate future value, the remainder consisting of young growth or nonproductive land. Approximately 14 million acres are owned by the government and the remainder is private land.

Prior to the annexation of Korea by Japan, no forest policies existed and the accessible timber was destructively exploited by the Koreans. The Japanese Government has established forest laws, and has undertaken to restore the productivity of the forests by granting land to individuals in return for its afforestation and protection. As a result, the forest situation has improved, but most of the merchantable timber is in the more remote and economically inaccessible regions where logging is difficult. Spruce, larch, pine, birch, oak, maple, alder, and several exotic trees grow well in Korea, but spruce, larch, and pine are the most important timber trees.

In spite of the efforts of the government to increase the domestic timber supply, Korea is dependent upon imports of lumber for the various industrial projects being developed to sustain Japanese operations in Manchuria and China.

Manchuria.—The forests of Manchuria, which lie principally in a belt along the northern and eastern border, are estimated at 88 million acres, or 36 percent of the total land area of the country. The area containing trees of commercial size, however, is much smaller, possibly 20 to 30 million acres, ^{1/} estimated at 1,577 billion board feet, ^{2/} exceeds that of Japan proper, Karafuto, Korea and Formosa, but the lack of adequate transportation facilities has limited its utilization. About three-fifths of the forests consists of hardwoods, including oak, elm, birch, maple, willow, and poplar. The remaining two-fifths are softwoods, chiefly larch and pine, which, economically, are more important than the hardwoods.

It is believed that the Japanese expected to tap these resources to supply the lumber and timber necessary for their industrial expansion and military operations in that country and China, and even to draw upon this supply for timber needed in Japan proper. Actually, consumption since 1933 has exceeded production, and Japan has been called upon to export lumber to Manchuria.

Kwantung.—Forests are reported to occupy about 217,000 acres, or about 25 percent of the area of Kwantung, but most of the forests probably consist of recently established plantations. The province is not self-sufficient in timber and does not contribute to the lumber supply of the Japanese mainland.

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Mandated Islands.—These islands contain little timber of importance, other than for local consumption.

^{1/} According to the Japan Yearbook, 1941, about 29 million acres contain trees, while Japan-Manchoukuo Yearbook, 1933, gives the forest area as only 22 million acres.

^{2/} Estimates vary from 1,080 to 1,789 billion board feet.

Organization of the lumber industry

The lumber industry in Japan proper is characterized by a large number of small mills scattered throughout the country. Many of these plants employ only one or two men who, by whipsawing, at which the Japanese are very skillful, turn out a few hundred board feet of lumber a day. About 2,000 mills are reported to exist, but the number equipped with modern machinery is small, the largest employ about 40 persons and produce from 10 to 50 million board feet of lumber and timber per year.

Logging is conducted with a minimum of equipment, and, by American standards, in an inefficient manner. Light skidding machinery is used to bring the logs to temporary, narrow-gage railroads, on which small trucks operate, chiefly by gravity, in carrying the logs to loading points on the main railroads. Drivable streams are few, but canals are used to a considerable extent in log transportation. Frequently 8 or 10 loadings are required before the logs reach the mill.

Forests give full or part-time employment to about 1.5 million persons, including those engaged in logging, reforestation, milling, and related work. Many of these are farmers who enter the forests during slack seasons to cut timber and fuelwood or to make charcoal; only about 280,000 are full-time employees. About 19 percent are women who work in forest nurseries, or do other light tasks. In 1934, the average daily wage was 94 sen. Wood cutters received 1.32 yen; lumbermen, 1.15 yen; charcoal makers, 90 sen; male reforestation workers, 90 sen; and female nursery workers, 54 sen.

Government control over forests and exploitation

The objective of the Japanese government has been ultimate self-sufficiency in timber resources. To attain this objective, the government has, for many years, favored a policy of conservation and has controlled cutting on the National Forests. Private forests also have been placed under strict regulation in recent years. Through reforestation, the total forest area of Japan proper is reported to have been increased by more than 5 million acres since 1915. As a further step toward assuring a continuous supply of wood, Japan acquired timber concessions in the Netherlands Indies and in Canada, and has attempted to improve, as well as to exploit, the forest resources of Manchuria, Korea, Formosa, and Kwantung.

In 1937, temporary measures were adopted regulating exports and imports of the prefectural districts, and in 1940 the Department of Agriculture and Forestry promulgated the Timber Supply Distribution Control Regulations, by which the prefectural governors were required, when necessary, to prepare and administer plans pertaining to the distribution and sale of timber. In February 1941, the Imperial Diet passed the all-important Lumber Control Law, ^{1/} superseding previous laws. Reckless cutting of Japan's forests was cited by the Department of Agriculture and Forestry as the principal reason for its passage. Strict regulation of felling is provided for by the Lumber Control Law, under which the Government may require owners to sell timber; may fix prices; and may designate

^{1/} Effective June 1, 1941.

species to be cut. Orders may be given to prohibit or restrict consumption, and sawmills may be instructed as to the kind of lumber to be sawn. The Government is also empowered to order producers, merchants, and importers to sell lumber to the Japan Lumber Company, a national control organization established to conduct export and import trade and to purchase and distribute domestic lumber. The Japan Lumber Company is assisted by subsidiary control companies, one located in each of the 14 blocs into which the country is divided. The Lumber Control Commission is the supreme policy forming body for the industry.

Production

Japan proper and Karafuto.—The quantity of timber felled in Japan proper and Karafuto, for all purposes except fuelwood, is shown in table 4. It will be noted that the drain upon Japanese forests has steadily risen, the cut of 13 billion board feet in 1939, the largest on record, being nearly $2\frac{1}{2}$ times greater than that of 1930. Softwoods contributed most of the increased cut; in Japan proper, softwood production nearly doubled in volume between 1930 and 1938, while hardwoods increased only 35 percent. In view of the efforts of the government to encourage production in the Empire and to acquire timber concessions elsewhere, there is little doubt that the forests of Japan proper are being overcut. Shipments of lumber from Karafuto to Japan proper are reported to have declined from 1 billion board feet in 1933 to 214 million feet in 1938, possibly indicating a dwindling supply of timber in that prefecture. However, production has been accelerated in recent years and overcutting is admitted. In 1940, the Minister for Overseas Affairs stated that the annual cut in Karafuto should not exceed 1.5 billion board feet, but actual felling was proceeding at a rate of more than 2 billion board feet a year.

Empire areas.—The forests of Korea, Formosa, Manchuria, and Kwantung are less intensively managed and exploited than those of Japan proper and Karafuto. The total timber felled in Manchuria in 1938 amounted to 1,508 million board feet, while 1,123 million feet were felled in Korea, and 138 million feet in Formosa. In comparison, 12,365 million board feet were cut in Japan proper and Karafuto in that year. Annual production in Kwantung is not available, but it is, comparatively, small.

^{1/} Pulpwood is included in table 4 for the reason that it is not separately reported as softwood and hardwood, but it is excluded, as far as possible, from table 1.

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Table 4.- Timber felled ^{1/} in Japan proper and Karafuto, 1928-40
(In 1,000 board feet ^{2/})

Year	Japan proper			Karafuto:	
	Softwoods	Hardwoods	Total	Total	Total
1928	3/	3/	5,851,200:	3/	2/
1929	4,782,296:	1,295,320:	6,077,616:	3/	2/
1930	4,489,312:	1,136,320:	5,626,056:	3/	2/
1931	4,685,624:	1,079,080:	5,765,128:	1,605,688:	7,370,816
1932	4,711,488:	1,201,192:	6,043,696:	3/	2/
Average, 1929-32	4,667,180:	1,177,978:	5,878,124:	3/	3/
1933	5,396,672:	1,233,840:	6,630,512:	3/	2/
1934	6,313,784:	1,273,696:	7,587,480:	2,000,008:	9,587,488
1935	6,577,936:	1,285,568:	7,863,504:	1,933,016:	9,796,520
1936	7,062,568:	1,447,960:	8,510,528:	2,112,792:	10,623,320
1937	8,048,280:	1,482,960:	9,531,240:	1,910,544:	11,441,784
Average, 1934-37	7,000,642:	1,372,546:	8,373,188:	1,989,090:	10,362,278
1938	8,753,400:	1,536,360:	10,349,760:	2,014,848:	12,364,608
1939 ^{4/}	3/	3/	13,180,850:	3/	2/
1940 ^{5/}	3/	3/	11,523,000:	1,230,000:	12,753,000

1/ Includes all timber cut, except fuelwood.
 2/ Quantities converted (1928-38) from cubic meters on the basis of 424 board feet per cubic meter.
 3/ Not available.
 4/ From Statistical Abstracts of the Department of Agriculture and Forestry, as cited in Consular report, Tokyo, 1941.
 5/ From a statement by the Minister of Agriculture and Forestry to the House of Representatives (Japan) on February 18, 1941, as cited in Consular report, Tokyo, 1941.

Source: Japan-Manchukuo Yearbook, except as noted.

Consumption

Industrial expansion in Japan in the early 1930's initiated a steady rise in lumber consumption, which was augmented in later years by the requirements for military operations. Consumption increased from 8.7 billion board feet in 1934 to possibly 11 billion feet in the years 1938-40, or nearly 30 percent (see table 1). A total of 11 billion board feet would represent a per capita consumption of around 150 board feet, as compared to a consumption of 190 board feet per person in the United States in 1939.

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The consumption of lumber in Japan proper in 1940, for all purposes except fuelwood, is shown in table 5.

Table 5.- Consumption of wood in Japan proper, 1940 ^{1/}

(In 1,000 board feet)	
Use	Quantity
Construction and furniture -----:	2,030,640
Box shock, packing, etc. -----:	1,160,880
Mine timbers -----:	1,387,920
Pulp manufacture -----:	968,640
Ship construction -----:	438,720
Manufacture of vehicles, etc.-----:	352,320
Road construction -----:	299,640
Railway ties -----:	401,520
Telephone and other poles -----:	157,440
Miscellaneous -----:	3,325,000
To -----:	11,022,720

^{1/} Includes all timber felled, except fuelwood.

Source: Consular report, Tokyo, 1941.

Among the miscellaneous items included in table 5 are plywood, matches, splint for match boxes, toys, clogs, pencils, and other manufactures. Wood used for plywood amounted to 256 million feet in 1937, and 168 million feet in 1938. Although the quantity of lumber used in such articles is not large, their production is important because they are made largely for export. Some 13,000 plants, including 167 plywood factories, are reported to be engaged in the manufacture of wood products.

Wood is the traditional material used for homes in Japan. Residences are almost exclusively one-story, frame houses, which are in keeping with the temperament of the people and their simple form of living. Although steel, concrete, and brick are being employed more extensively in the modern business and industrial establishments, there is no indication of a trend to substitute these materials for wood in the construction of homes. Rather, the present acute housing shortage and a possible increase in population after the war, point to a greater use of wood for this purpose if the prewar standard of living is maintained.

Available data do not indicate the extent to which wood has been diverted from civilian to military and war industry purposes. However, the Government has severely restricted civilian use of lumber, and based on the known essentiality of wood to the conduct of war, no doubt exists that the increase in consumption since 1933 has gone largely to support Japanese aggression.

Imports

Between 1934 and 1937, imports of logs and lumber into Japan amounted to about 8 percent of the volume of logs and lumber consumed in that country, or 798 million board feet annually. Nearly all such imports came from foreign sources. Softwoods made up the bulk of imports, of which Douglas fir, pine, hemlock, and spruce from the United States and Canada comprised about 90 percent. The remainder consisted chiefly of apitong and lauan (Philippine mahogany) from the Philippine Islands, British Borneo, and the Netherlands Indies; kiri ^{1/} from China; aspen from the United States, Canada, Manchuria, and the Soviet Union; and ebony, teak, and other hardwoods from southeastern Asia and the Netherlands Indies. Various softwoods and hardwoods also were obtained from Formosa and Korea.

As shown in table 6, imports of softwood logs and lumber from foreign sources amounted to 1.6 billion board feet in 1928, and the average importation from 1928 to 1932 was 1.1 billion feet. During the next five years, however, softwood imports from these sources averaged slightly over one half billion board feet, or only 50 percent of that during the period from 1928 to 1932. Imports in 1938 and 1939 were reduced to 126,000 and 127,000 board feet respectively, or less than one-twelfth of the volume imported in 1928 and only one-sixth of that in 1932.

The quantity of ebony, teak (and similar woods), kiri, and aspen imported from foreign countries also declined during the decade following 1929, as shown in table 7, but the imports of lauan and associated species from the Philippine Islands, British Borneo, and the Netherlands Indies (known collectively in Japanese trade as "South Seas hardwoods") increased rapidly (table 8). ^{2/} Total foreign hardwood imports declined from 89 million board feet in 1928 to 59 million feet in 1932, but subsequently increased to 337 million board feet in 1937.

Lumber and logs imported into Japan from Empire areas amounted to approximately 25 million board feet annually between 1928 and 1932 and over 30 million feet from 1933 to 1937. As shown in table 9, Korea was the principal source, followed by Formosa.

^{1/} *Paulownia tomentosa*.

^{2/} The volume of South Seas hardwoods shown in table 8 is approximately equivalent to the volume omitted from table 7. The data in table 8 include some imports from Thailand which are also included in table 7.

Table 6.- Lumber, softwood: ^{1/} General imports into Japan from principal foreign sources, 1928-39

Year	United States	Canada	Soviet Union	Other foreign countries	Total
Quantity (1000 board feet) ^{2/}					
1928	1,369,037	115,200	179,626	2,092	1,665,955
1929	1,067,702	86,059	164,110	199	1,318,070
1930	659,996	148,009	207,691	11	1,015,707
1931	587,693	197,652	163,381	55	948,781
1932	368,636	151,121	144,746	29	664,532
Average, 1928-32:	810,613	139,608	173,911	477	1,124,609
1933	368,353	127,709	70,360	9	566,431
1934	311,291	155,892	12,402	4	479,589
1935	409,874	131,047	32,508	168	573,597
1936	465,220	100,600	3,041	192	568,053
1937	273,221	126,907	18,706	87	418,921
Average, 1933-37:	365,592	128,431	27,403	92	521,518
1938	76,287	44,272	5,783	39	126,381
1939	3/	3/	3/	3/	127,465
Value (1,000 yen)					
1928	84,627	6,882	10,425	133	102,067
1929	67,018	5,107	8,423	16	80,564
1930	32,379	6,729	7,707	7	46,822
1931	25,665	7,754	4,777	18	38,214
1932	19,430	7,321	3,522	12	30,285
Average, 1928-32:	45,823	6,758	6,972	38	60,591
1933	23,102	7,602	2,516	4	33,224
1934	20,443	9,384	619	1	30,447
1935	27,412	8,259	1,410	8	37,089
1936	31,161	6,146	107	231	37,645
1937	29,195	11,304	1,005	9	41,513
Average, 1933-37:	26,262	8,539	1,132	50	35,993
1938	9,083	3,800	297	2	13,182
1939	3/	3/	3/	3/	13,308

PURL: <http://www.legal-tools.org/doc/c53048/>

^{1/} Logs, cants, and sawn lumber and timber (also probably railroad ties, which are not separately classified) of cedar, fir, pine, hemlock and spruce.

^{2/} Converted from cubic meters on the basis of 424 board feet per cubic meter.

^{3/} Not available by countries.

Source: Annual and Monthly Returns of Foreign Trade of Japan.

Table 7.- Lumber, hardwoods ^{1/} General imports into Japan from principal foreign sources, 1928-39

Year	United States	Canada	Philippine Islands	British India ^{2/}	British Borneo	Netherlands Indies	Czechoslovakia	Thailand	All other	Total
Quantity (1,000 board feet) ^{3/}										
1928	11	-	1	46,892	-	2,495	5/ 2,579	8,155	599	60,741
1929	27	-	-	38,319	-	2,615	5/ 1,459	6,997	935	50,352
1930	43	-	-	666	-	1,449	5/ 1,022	4,843	25,939	34,393
1931	6/	6/	6/	33	6/	3,032	5/ 1,219	4,937	10,865	20,086
1932	6/	6/	6/	52	6/	1,910	5/ 212	4,496	21	6,691
Average, 1928-32	90	7/	7/	17,196	7/	2,310	1,298	5,886	7,672	34,453
1933	1,492	6/	6/	42	6/	2,401	4,29	4,992	2,167	11,963
1934	6,180	2,241	6/	88	6/	2,486	362	4,711	7	16,075
1935	8,370	-	6/	85	6/	2,609	444	5,796	99	17,163
1936	17,187	1,635	2	75	6/	3,171	3,967	5,567	44	31,948
1937	17,187	3,178	2	31	6/	1,974	4,670	8,388	69	25,509
Average, 1933-37	8,157	1,411	1	64	6/	2,611	1,976	5,639	469	20,532
1938	5,296	190	-	9	6/	1,132	766	2,901	18	10,342
1939	-	-	-	-	-	-	-	-	-	16,509
Value (1,000 yen)										
1928	282	-	-	2,491	-	87	5/ 699	2,599	390	8,541
1929	375	-	-	1,743	-	1,150	5/ 465	1,849	420	7,906
1930	236	-	-	1,457	196	600	5/ 298	1,213	6/ 2,446	5,587
1931	509	20	-	8	251	798	5/ 295	988	818	4,877
1932	793	24	-	13	269	679	45	998	155	4,636
Average, 1928-32	444	9	-	879	143	809	360	1,521	601	6,399
1933	641	22	-	14	798	1,816	99	1,190	260	7,142
1934	518	85	-	31	1,375	2,039	66	1,616	132	9,563
1935	814	-	-	34	2,342	2,120	91	1,662	199	12,677
1936	1,023	71	-	30	4,325	2,011	677	1,773	352	17,592
1937	882	213	-	14	3,198	2,477	686	3,111	663	22,644
Average, 1933-37	776	78	-	25	2,448	2,053	390	1,763	514	13,684
1938	663	9	-	3	1,980	2,281	289	1,236	521	13,697
1939	-	-	-	-	-	-	-	-	-	18,516

^{1/} Includes logs, cuts, and sawed lumber and timber (also possibly railroad ties, which are not separately reported) of abney, oak (and similar woods), birch, aspen, and "other" woods. "Other" woods which may include small quantities of softwoods (except species shown in table 6) cannot identify at present. The values only of "other" woods is included in this table, but the approximate quantities are reported in table 6.

^{2/} Includes Ceylon prior to 1934, and Burma prior to 1936.

^{3/} Converted to board feet from original units as follows: teak - 424 board feet per cubic meter; birch and aspen - 57.51 board feet per 100 kilograms; abney and similar woods - 25.44 board feet per 100 kilograms.

^{4/} Reported by value only, or quantity reported is less than 500 board feet.

^{5/} Includes certain imports from Manchuria.

^{6/} Nearly all from the Soviet Union.

^{7/} Not available.

^{8/} Not available by countries.

Sources: Annual and Monthly Returns of Foreign Trade of Japan.

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Table 8.- "South Seas hardwoods": ^{1/} General imports into Japan, 1928-39

Year	Quantity	Year	Quantity
	<u>1,000 board feet</u>		<u>1,000 board feet</u>
1928 -----	28,162	1933	90,045
1929 -----	41,888	1934	141,460
1930 -----	37,817	1935	195,953
1931 -----	46,630	1936	268,707
1932 -----	51,170	1937	311,976
Average, 1928-32 ----	41,133	Average, 1933-37	201,628

^{1/} Chiefly lauan (and associated species) from the Philippine Islands, British Borneo, and the Netherlands Indies, but some hardwoods from Thailand are included. (See footnote 1, table 7).

Table 9.- Lumber: ^{1/} General imports into Japan
from Empire Areas, 1928-39

Year	Korea	Formosa	Kwantung ^{2/}	Manchuria	Total
Quantity (1,000 board feet) ^{3/}					
1928	12,081	9,640	780	4/	22,501
1929	8,596	11,131	1,967	4/	21,694
1930	4,941	7,396	5,825	4/	18,162
1931	20,596	8,023	2,133	4/	30,752
1932	19,100	11,745	324	4/	31,169
Average, 1928-32	13,277	9,587	2,206	4/	25,070
1933	10,178	14,303	39	92	24,612
1934	16,866	12,715	50	240	29,871
1935	29,195	8,930	33	648	38,806
1936	22,081	11,578	-	64	33,723
1937	27,635	9,954	7	2,246	39,842
Average, 1933-37	21,191	11,496	26	227	33,270
1938	20,424	13,467	25	4,195	38,111
1939	21,096	4/	4/	4/	4/
Value (1000 yen)					
1928	1,220	1,861	224	171	3,476
1929	992	2,147	273	90	3,502
1930	625	1,315	630	39	2,609
1931	1,214	1,145	283	-	2,642
1932	1,024	1,771	79	25	2,899
Average, 1928-32	1,015	1,649	297	65	3,026
1933	697	2,210	10	205	3,122
1934	1,145	1,852	34	139	3,170
1935	2,506	1,286	20	183	4,000
1936	1,744	1,994	14	298	4,050
1937	2,162	2,058	1	660	4,881
Average, 1933-37	1,651	1,879	16	299	3,845
1938	1,900	3,097	8	1,293	6,298
1939	2,223	4/	4/	4/	4/

^{1/} Includes logs, cants, sawn lumber and timbers and railroad ties. Imports from Mandated Islands not available.

^{2/} Probably largely transshipments.

^{3/} Quantities exclude certain classifications reported by value only and are, therefore, not related to values shown. Quantities converted from original unit, on the basis of 424 board feet per cubic meter; 57.51 board feet per 100 kin; 11.76 board feet per cubic shaku. and 1.13 board feet per square shaku.

^{4/} Not available.

Source: Annual and Monthly Returns of Foreign Trade of Japan, Annual Return of the Trade of Formosa, and Tables of Trade and shipping of Korea.

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During the period from 1928 to 1932, sawed lumber and timbers of softwood species imported from foreign sources averaged 593 million board feet, as compared to 529 million feet of logs and cants; but during the next 5 years the relative position of these classes of imports was reversed, sawed lumber and timbers amounting to 239 million board feet annually, and logs and cants, 282 million feet. Logs and lumber of hardwood species are not separately reported for all countries in Japanese trade statistics, but nearly all hardwood imports are in the form of logs and cants. Considering softwoods and hardwoods together, logs and cants considerably exceed sawed lumber and timber in the total imports. The general trend was toward a greater proportion of logs in conformance with Japan's policy of importing basic raw materials to supply the manufacturing industries of the country.

Most of the imports of lumber from the United States and Canada (90 percent between 1933 and 1937) consisted of squared timbers for resawing. The utilization of this type of material by the Japanese not only helped to keep the mills of that country in operation, but it also helped to prevent an accumulation of low-grade lumber in American stocks. It is common practice in the United States to cut a few high grade boards from the outer portion of a log and to export the remaining square which contains most of the defects of the log. If these squares were sawed into boards, the resultant product of lower grade would tend to depress lumber prices in general in this country. The importance of the Japanese market to the United States producers is apparent from the fact that Japan took 38 percent of United States exports of softwood timbers in 1929 and 25 percent in 1941.

Factors affecting imports.—The decline in softwood imports and the large increase in domestic softwood production during a period of industrial expansion and preparation for military aggression is a reflection of the policy of Japan to become independent, as far as possible, of foreign sources of lumber and timbers. The period 1928-40 especially was characterized by increasing tariff rates, and by restricted import quotas on these products. A revision of the Japanese tariff schedule in 1929 established duties on certain classes of logs, lumber, and timbers formerly duty-free, and increased the rates on others. In 1932, some products became subject to an internal revenue tax. Another factor adversely affecting imports was the depreciation of the value of the yen in December 1931. Softwood lumber prices rose steadily from 46 yen per thousand board feet in 1932 to 108 yen per thousand feet in 1939. South Seas hardwoods showed only a moderate gain in price during the same period.

The increase in imports of South Seas hardwoods is attributable to the fact that these species are not produced commercially in Japan and domestic woods cannot satisfactorily be substituted for them in many of their uses. About one-half of the volume of these imported woods was used in the manufacture of plywood, which was the principal wood manufacture exported by Japan before the war. Mahogany and teak are used also in naval construction and for other specialized purposes for which native woods are less suitable.

Special aircraft grades of spruce and Douglas fir were obtained from the United States and Canada before the outbreak of hostilities with these countries. Japanese companies held timber concessions in Canada and in the

Netherlands Indies which supplied part of the import requirements. Although the Canadian concessions have not been available to Japan since the freezing of Japanese assets by the Canadian Government in 1941, it is certain that the forests of all the occupied islands of the South Seas and of southeastern Asia have been exploited insofar as shipping and other economic and military considerations have permitted.

Exports

Japan's average exports of logs and sawed lumber and timbers ^{1/} between 1934 and 1937 were 536 million board feet, as compared to imports of 798 million board feet (table 1). In 1938 exports were 745 million board feet, and in 1940 the Minister of Agriculture and Forestry reported exports totaling more than 2 billion board feet. However, nearly all of the exports went to Empire areas—84 percent between 1934 and 1937. A large increase occurred in exports to foreign countries in recent years, but most of the increase is accounted for by shipments to China, undoubtedly for Japanese account. For example, of 184 million board feet exported to foreign countries in 1938, 140 million feet went to China.

Exports of softwood logs and lumber (other than railroad ties) to foreign countries amounted to 32 million board feet annually between 1934 and 1937, as shown in table 10. Comparable hardwood exports were 66 million feet (table 11). In 1938, softwood exports amounted to 139 million board feet, while hardwood exports were only 41 million feet. The 1934-37 exports to Empire areas, including railroad ties, amounted to 437 million board feet annually (table 12). Exports of lumber and timbers to Formosa and Korea are not separately reported by species, but shipments to Manchuria and Kwantung Leased Territory were chiefly oak, sugi, pine, spruce, and fir. It is probable that most of the exports were of domestic species, but some exports may have included lumber cut from imported woods.

In addition to lumber, Japan exports substantial quantities of wood manufactures, such as plywood, box shooks, match sticks, and other products. Following the general industrial trend, the manufacture of these commodities increased during the last decade. The average value of the exports of these manufactures was 7 million yen in the years 1928-32, 11 million yen in the years 1933-37, and 23 million yen in 1938.

^{1/} Logs and cants generally predominate in Japanese exports, although sawed lumber and timbers made up the greater part in 1938.

Table 10.- Lumber, softwood: ^{1/} Exports (domestic merchandise)
from Japan to principal foreign markets, 1934-38

Year	: United : States :	China	: British : India ^{2/} :	Soviet : Union :	Other	: Total
	Quantity (1,000 board feet) ^{3/}					
1934	5 :	35,376 :	1,546 :	6,530 :	226 :	43,683
1935	8 :	29,517 :	1,382 :	1,646 :	544 :	33,097
1936	4/ :	18,721 :	1,705 :	- :	321 :	20,747
1937	3,205 :	25,063 :	494 :	- :	558 :	29,320
Average, 1934-						
37	805 :	27,169 :	1,282 :	2,044 :	412 :	31,712
1938	154 :	124,914 :	13,156 :	- :	1,011 :	139,035
	Value (1,000 yen)					
1934	5/ :	1,093 :	147 :	493 :	23 :	1,756
1935	5/ :	1,270 :	110 :	75 :	45 :	1,490
1936	5/ :	711 :	99 :	- :	32 :	842
1937	56 :	1,291 :	77 :	- :	72 :	1,496
Average, 1934-						
37	14 :	1,091 :	109 :	142 :	40 :	1,396
1938	7 :	9,635 :	33 :	- :	104 :	9,779

^{1/} Includes logs, cants, sawn lumber and timbers, except railroad ties.
Softwoods were not separately reported prior to 1934.

^{2/} Includes Burma prior to 1938.

^{3/} Converted from original units on the basis of 424 board feet per cubic meter.

^{4/} Less than 500 board feet.

^{5/} Less than 500 yen.

Source: Annual and Monthly Returns of Foreign Trade of Japan.

Table 11.- Lumber, hardwoods: 1/ Exports (domestic merchandise) from Japan
to principal foreign markets, 1934-38

Year	United States	China	Great Britain	British India 2/	Netherlands	New Zealand	Union of South Africa	Belgium	Soviet Union	Australia	Other	Total
Quantity (1,000 board feet) 3/												
1934 -----	2,211	14,506	16,284	2,029	1,632	1,650	2,722	1,081	1,321	1,248	1,582	46,266
1935 -----	5,008	16,346	19,168	1,888	1,922	1,628	1,808	1,499	58	931	1,966	52,222
1936 -----	2,837	30,115	27,997	14,458	2,791	9,018	2,427	1,647	-	3,012	2,277	96,579
1937 -----	2,063	13,076	30,265	10,278	3,701	3,458	2,126	2,240	-	711	1,555	69,473
Average, 1934-37	3,030	18,511	23,429	7,163	2,511	3,938	2,271	1,617	345	1,475	1,845	66,135
1938 -----	285	15,482	12,016	5,671	2,145	1,968	1,661	995	-	1,475	761	41,467
Value (1,000 yen)												
1934 -----	383	776	2,883	147	240	282	455	198	87	205	234	5,890
1935 -----	850	914	3,495	197	308	274	305	273	8	153	301	7,078
1936 -----	460	979	4,974	100	450	455	380	289	-	155	362	8,604
1937 -----	302	920	7,339	169	657	751	375	466	-	154	347	11,480
Average, 1934-37	499	897	4,673	153	414	440	379	306	24	167	311	8,263
1938 -----	74	1,993	3,219	84	415	496	257	211	-	134	207	7,090

1/ Includes logs, cants, and sawn lumber and timbers, except railroad ties. Hardwoods not separately reported prior to 1934.

2/ Includes Burma prior to 1938.

3/ Converted from original units on the basis of 424 board feet per cubic meter.

Source: Annual and Monthly Returns of Foreign Trade of Japan.

Table 12.- Lumber: ^{1/} Exports of domestic merchandise from Japan to Empire areas, ^{2/} 1928-40

Year	Korea	Formosa	Kwantung	Manchuria	Total
Quantity (1,000 board feet) ^{3/}					
1928	35,187	81,443	4/ 1,650	5/	5/
1929	30,766	91,932	4/ 115	5/	5/
1930	28,600	89,892	4/ 110	5/	5/
1931	22,443	97,636	4/ 4/	5/	5/
1932	29,687	128,416	4/ 233	-	5/
Average, 1928-32	29,337	97,864	4/ 422	5/	5/
1933	61,682	125,414	4/ 3,850	4/ 13,031	-
1934	96,468	133,885	232,052	48,360	510,765
1935	102,748	186,850	65,684	19,202	374,484
1936	130,374	215,862	51,324	22,895	420,455
1937	127,257	204,242	94,726	17,950	444,175
Average, 1933-37	103,742	173,251	6/ 110,946	6/ 27,102	6/ 437,470
1938	153,204	191,348	176,767	39,264	560,583
1939	266,995	5/	5/	5/	5/
1940	263,854	5/	5/	5/	5/
Value (1,000 yen)					
1928	3,800	5,793	1,733	5/	5/
1929	3,471	6,768	2,459	5/	5/
1930	2,573	5,223	634	5/	5/
1931	1,657	4,792	451	5/	5/
1932	2,063	5,912	661	3	8,600
Average, 1928-32	2,713	5,598	1,188	5/	5/
1933	4,530	6,710	2,630	669	14,539
1934	7,757	7,751	3,581	2,232	21,321
1935	9,128	11,000	3,911	923	24,962
1936	12,113	12,809	2,679	1,082	28,683
1937	14,217	13,921	4,204	1,056	33,398
Average, 1933-37	9,549	10,437	3,401	1,192	24,581
1938	21,537	16,364	12,306	3,116	53,323
1939	39,184	5/	5/	5/	5/
1940	45,137	5/	5/	5/	5/

^{1/} Includes logs, cants, sawn lumber and timber, and railroad ties.

^{2/} Exports to Mandated Islands not available. Such exports are negligible.

^{3/} Converted from original units on the basis of 424 board feet per cubic meter, 120 board feet per koku, 33 board feet per tie, 1.18 board feet per square shaku, and 11.78 board feet per cubic shaku..

^{4/} Railroad ties only. Other classifications not reported by quantity.

^{5/} Not available.

^{6/} Average, 1934-37.

Source: Annual and Monthly Returns of Foreign Trade of Japan; Annual Return of the Trade of Formosa; and Tables of Trade and Shipping of Korea.

Factors affecting exports.--The proximity of markets in China and other countries of southeastern Asia has tended to favor Japanese export trade in lumber and wood manufactures. Japan's former exports of lumber and timbers to China, although not large in comparison with China's total imports of these products, were important to Japan. The depreciation of the value of the yen in 1931, and the general industrial expansion during the following years stimulated Japan's export trade. However, the China "incident" in 1937 was the most important factor affecting the increase in shipments of lumber and timbers, as it forced Japan into the position of shipping material to Manchuria and occupied China for bridges, barracks, mines, and railroads, and for the construction of factories, in support of military operations. Such shipments cannot be considered true exports, inasmuch as they are intended for direct or indirect Japanese consumption.

Postwar problems

After the war, Japan will be faced with the problem of readjusting its economy to the extent possible on the basis of the natural resources within the borders of Japan proper and Karafuto. It has been pointed out that Japan, although extensively forested, is not self-sufficient in timber resources at the level of consumption which has prevailed during the last two decades, and that overcutting has characterized the exploitation of Japan's forests in recent years. Furthermore, it is likely that the population of the country will continue to increase after the war, with a consequent greater demand for timber for homes and other domestic uses. On the other hand, the termination of Japan's activities in continental Asia will considerably reduce the drain upon the forests and permit the utilization of those resources for domestic development. It is probable that Japan can, by careful management, supply its minimum requirements, but at a reduced per capita consumption for a period of years after the war.

Japan's imports of logs and lumber might be materially reduced for some years after the war, because of its lack of foreign exchange, and because any surplus of lumber in the principal producing countries will probably be directed toward rehabilitation in war-torn Allied countries. Curtailment of imports of ebony, teak, mahogany, and other tropical hardwoods would be keenly felt by Japan, inasmuch as these woods are not produced domestically in commercial quantities. Much of the mahogany and associated cabinet woods are utilized in the manufacture of veneer and plywood, largely for export. Japan's deficit in softwoods is particularly acute in large structural timbers and the better grades of lumber for special purposes. Softwood timber suitable for the production of high quality plywood is also in short supply. It is that unless imports of such material are available Japan's industrial development will be retarded. Production in Japan, either of hardwoods or softwoods, will not permit a large export trade in lumber or wood manufactures.